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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,932	02/04/2004	Chunchieh Huang	M-15327 US	6068
32605	7590	09/12/2005	EXAMINER	
MACPHERSON KWOK CHEN & HEID LLP			LUU, CHUONG A	
1762 TECHNOLOGY DRIVE, SUITE 226			ART UNIT	
SAN JOSE, CA 95110			PAPER NUMBER	

2818

DATE MAILED: 09/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/772,932

Applicant(s)

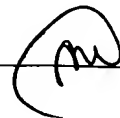
HUANG ET AL.

Examiner

Chuong A. Luu

Art Unit

2818



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 12-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/13/05; 2/4/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election of Group I, claims 1-11 in the reply filed on June 27, 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

PRIOR ART REJECTIONS

Statutory Basis

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The Rejections

Claims 1 and 3-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Ha (U.S. 6,451,708 B1).

Ha discloses a semiconductor device with

(1) (i) forming a first layer comprising a first portion and a second portion, wherein the first portion is to provide a first feature of the integrated circuit, and the second portion physically contacts the first portion at the location of the first feature;

(ii) forming a first mask over the first layer, the first mask overlying the first portion but having an opening over the second portion;

(iii) etching the second portion selectively to the first mask to at least partially remove the second portion;

(iv) forming a second mask over the first layer, the second mask covering the first and second portions;

(v) etching the first layer selectively to the second mask, wherein the etching of the first layer comprises lateral etching of the first layer (see Figure 2C);

(3) wherein the etching operation (iii) comprises anisotropic etching of the second portion (see column 1, lines 31-40);

(4) further comprising, before forming the first layer, forming at least one first structure projecting upward over a semiconductor substrate in the integrated circuit;

wherein the first and second portions are sidewall spacers formed over a sidewall or sidewalls of the first layer (see Figure 2C);

(5) further comprising, before forming the first layer, forming at least one first structure projecting upward over a semiconductor substrate in the integrated circuit, each first structure comprising a first sidewall and a second sidewall;

wherein the first portion of the first layer overlays the first sidewall of the first structure;

wherein the first layer further comprises a third portion over the second sidewall of the first structure;

wherein the operation (v) removes the third portion (see Figure 2C);

Art Unit: 2818

(6) wherein the operation (i) comprises anisotropically etching the first layer to form spacers over the first and second sidewalls of the first structure (see column 1, lines 31-40);

(7) wherein the first and second sidewalls are dielectric sidewalls (see Figure 2C);

(8) wherein the integrated circuit comprises an additional feature at least partially patterned by the etching operation (iii) (see Figure 2C);

(9) wherein the additional feature is a transistor gate (see Figure 2C);

(10) wherein the operation (iii) removes the second portion only partially (see Figure 2C);

(11) wherein the first portion is conductive (see column 3, lines 23-40).

PRIOR ART REJECTIONS

Statutory Basis

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The Rejections

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ha (U.S. 6,451,708 B1) in view of Wang (U.S. 6,541,324 B1).

Ha teaches the above outlined features except for using isotropic etching to remove the first layer. However, Wang discloses a memory array with (2) wherein the operation (v) is isotropic etching of the first layer (see column 9, lines 40-53). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teaching of Ha (in accordance with the teaching of Wang). Doing so would facilitate the manufacture of the semiconductor device and reduce the roughness surface of the semiconductor layer.

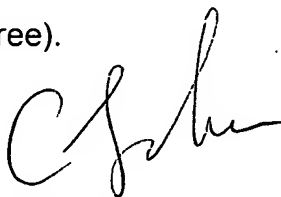
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuong A. Luu whose telephone number is (571) 272-1902. The examiner can normally be reached on M-F (6:15-2:45).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2818

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'C. Luu', is positioned above the printed name and title.

Chuong Anh Luu
Patent Examiner
July 25, 2005